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NEWS 9 APR 30 CHEMCATS enhanced with 1.2 million new records
NEWS 10 APR 30 CA/CAPLUS enhanced with 1870-1889 U.S. patent records
NEWS 11 APR 30 INPADOC replaced by INPADOCDB on STN
NEWS 12 MAY 01 New CAS web site launched
NEWS 13 MAY 08 CA/CAPLUS Indian patent publication number format defined
NEWS 14 MAY 14 RDISCLOSURE on STN Easy enhanced with new search and display fields
NEWS 15 MAY 21 BIOSIS reloaded and enhanced with archival data
NEWS 16 MAY 21 TOXCENTER enhanced with BIOSIS reload
NEWS 17 MAY 21 CA/CAPLUS enhanced with additional kind codes for German patents
NEWS 18 MAY 22 CA/CAPLUS enhanced with IPC reclassification in Japanese patents
NEWS 19 JUN 27 CA/CAPLUS enhanced with pre-1967 CAS Registry Numbers
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NEWS 22 JUL 02 LEMBASE coverage updated
NEWS 23 JUL 02 LMEDLINE coverage updated
NEWS 24 JUL 02 SCISEARCH enhanced with complete author names
NEWS 25 JUL 02 CHEMCATS accession numbers revised
NEWS 26 JUL 02 CA/CAPLUS enhanced with utility model patents from China

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

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=> s acrylonitrile

L1 103011 ACRYLONITRILE

=> s l1 and ammoxidation (8w) reactor

L2 63 L1 AND AMMOXIDATION (8W) REACTOR

=> s l2 and fourier (6w) transform (6w) infrared (8w) (spectrometer or spectrophotometer)

L3 1 L2 AND FOURIER (6W) TRANSFORM (6W) INFRARED (8W) (SPECTROMETER OR SPECTROPHOTOMETER)

=> display l3 1 ibib abs

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:725841 CAPLUS

DOCUMENT NUMBER: 133:270789

TITLE: Apparatus and process for monitor and control of an ammoxidation reactor with a Fourier transform infrared spectrometer

INVENTOR(S): Casal, Hector L.; Azker, Nazaneen; Seely, Michael J.; Nero, Linda L.; Baldwin, Jean A.

PATENT ASSIGNEE(S): Bp Amoco Corp., USA

SOURCE: PCT Int. Appl., 65 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060336	A1	20001012	WO 2000-US8414	20000329
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW,			

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BE, BJ, CF,
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 DE 10084432 T0 20020321 DE 2000-10084432 20000329
 TW 475059 B 20020201 TW 2000-89106074 20000412
 US 2002055175 A1 20020509 US 2001-945464 20010830
 US 6607447 B2 20030819
 US 2004023407 A1 20040205 US 2003-624022 20030721
 PRIORITY APPLN. INFO.: US 1999-282934 A 19990401
 WO 2000-US8414 W 20000329
 US 2001-945464 A3 20010830

AB The present invention is a method and an apparatus for identifying and quantifying components in an effluent stream from an ammoxidn. reactor. The apparatus comprises a microprocessor and a Fourier Transform IR spectrometer, wherein the microprocessor is programmed to identify and quantify each of the plurality of components based upon the absorbance data and calibration data, the calibration data being obtained from recovery run analyses and calibration analyses in the sample cell. The Fourier Transform IR spectrometer has a sample cell through which may flow a portion of the effluent stream, an IR source to emit IR radiation and pass the IR radiation through the effluent stream, an IR detector to detect transmitted IR radiation at the selected IR wavelengths and to generate absorbance data due to absorbance of the IR radiation by the components, wherein each of the components absorbs IR radiation at one or more of the IR wavelengths, and an output apparatus to provide the absorbance data to the microprocessor. The apparatus is used in this case to analyze acrylonitrile reactor effluents. The method may be applied to utilize the apparatus to provide real-time control of the operation of an ammoxidn. reactor, based on the anal. results obtained by the FT-IR spectrometer and the calibration model developed therefor.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> s ammoxidation (8w) reactor
 0 AMMOXIDATION
 0 REACTOR
 1 REACTORS
 1 REACTOR
 (REACTOR OR REACTORS)
 L4 0 AMMOXIDATION (8W) REACTOR

=> file caplus compendex inspec

COST IN U.S. DOLLARS

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=> s ammoxidation (8w) reactor

L5 109 AMMOXIDATION (8W) REACTOR

=> s l5 and fourier (6w) transform (6w) infrared (8w) (spectrometer or spectrophotometer)

L6 1 L5 AND FOURIER (6W) TRANSFORM (6W) INFRARED (8W) (SPECTROMETER OR SPECTROPHOTOMETER)

=> s l5 and acrylonitrile

L7 63 L5 AND ACRYLONITRILE

=> s l7 and (spectrometer or spectrophotometer)

L8 1 L7 AND (SPECTROMETER OR SPECTROPHOTOMETER)

=> s l7 and FTIR

L9 0 L7 AND FTIR

=> duplicate remove l7 1-63

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L10 61 DUPLICATE REMOVE L7 CAPLUS (2 DUPLICATES REMOVED)

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L10 ANSWER 1 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1239957 CAPLUS

DOCUMENT NUMBER: 144:6511

TITLE: Ammoxidation of organic compounds using mixed oxide catalysts containing molybdenum, bismuth, and iron and molybdenum-containing activators

INVENTOR(S): Watanabe, Hirokazu; Watanabe, Seigo; Miyaki, Kenichi; Yamaguchi, Masanori

PATENT ASSIGNEE(S): Dia-Nitrix Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005325068	A	20051124	JP 2004-145245	20040514
PRIORITY APPLN. INFO.:			JP 2004-145245	20040514

OTHER SOURCE(S): CASREACT 144:6511

AB Ammoxidn. of organic compds. is performed using mixed oxide catalysts containing

at least Mo, Bi, and Fe having bulk d. 0.85-1.20 and Fe iron and Mo-containing activators having bulk d. 1.3-1.9 in fluidized-bed reactors, wherein a feed gas-increasing step to increase initial velocity of feed gas in the reactor to 1.05-1.40 times that in the steady state for a time between 0.5 min and 5 h is repeated at least once every 200 h. The activators staying in the bottom of the reactor in the steady state are lifted to the mixed oxide catalyst layer when amount of feed gas is increased and effectively contacted with the catalysts to activate them. Thus, a gaseous mixture of air, NH₃, steam, and propylene was fed to a fluidized-bed reactor packed with Mo₁₀Bi_{0.4}Fe_{4.3}Ni₅Cr_{0.8}CoSb_{3.5}K_{0.2}Ce_{0.4}P_{0.2}B_{0.2}O_{52.07}(SiO₂)₃₅ (preparation given) and ammonium paramolybdate at 200 KPa and 430° while intermittently increasing initial velocity of the feed gas from 0.52 m/s (steady state) to 0.62 m/s only for 1.5 h at a predetd. interval (once every 150 h). Yield of acrylonitrile after 1000 h was 81.5%, vs. 81.6% after 5 h.

L10 ANSWER 2 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:632271 CAPLUS

DOCUMENT NUMBER: 143:115908

TITLE: Manufacture of acrylonitrile using granular catalysts

INVENTOR(S): Watanabe, Seigo; Yanagida, Motoo; Miyaki, Kenichi; Yamaguchi, Masanori

PATENT ASSIGNEE(S): Dia-Nitrix Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005194234	A	20050721	JP 2004-2912	20040108
PRIORITY APPLN. INFO.:			JP 2004-2912	20040108

AB Acrylonitrile is manufactured by reaction of propylene with mol. O and NH₃ in a fluidized-bed reactor filled with granular catalysts showing specific particle size distribution while discharging 0.05-1% of the catalysts of 20-44 μm particle size per a day and supplying granular catalysts of specific particle size distribution at 0.03-1% (based on total catalyst) per a day during the reaction. Thus, ammoxidn. of propylene was carried out using Mo₁₂Bi_{0.5}Fe₂Ce_{0.5}Cr_{0.4}Ni₄Mg_{1.5}Co₁K_{0.07}Rb_{0.06}Ox(SiO₂) while partially replacing the catalyst for 42 days to result in initial and final yield 82.6 and 82.3%, resp.

L10 ANSWER 3 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:634973 CAPLUS

DOCUMENT NUMBER: 143:133797

TITLE: Method for preparation of acrylonitrile by ammoxidation of propylene using fluidized-bed

reactors
 INVENTOR(S): Tanaka, Isao; Kameo, Hiroshi
 PATENT ASSIGNEE(S): Dia-Nitrix Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005193172	A	20050721	JP 2004-3013	20040108
PRIORITY APPLN. INFO.:			JP 2004-3013	20040108

AB The method comprises removing partial particulate catalysts from the reactors, classifying the catalyst particles to obtain fine catalyst particles (diameter 20-44 μm), and feeding the fine catalysts with a small amount of fresh catalysts to the reactors so as to improve the flowability of the catalysts and the yield of the product.

L10 ANSWER 4 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2003:454266 CAPLUS
 DOCUMENT NUMBER: 139:36954
 TITLE: Oxidation process in a fluidized-bed reactor
 INVENTOR(S): Fiorentino, Michele; Newton, David; Salem, George
 Frederick; Williams, Bruce Leo
 PATENT ASSIGNEE(S): BP Chemicals Limited, UK
 SOURCE: PCT Int. Appl., 35 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003048097	A1	20030612	WO 2002-GB5415	20021129
WO 2003048097	A8	20050324		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003109746	A1	20030612	US 2002-303769	20021126
US 7145033	B2	20061205		
CA 2468500	A1	20030612	CA 2002-2468500	20021129
AU 2002349140	A1	20030617	AU 2002-349140	20021129
BR 2002014709	A	20040831	BR 2002-14709	20021129
EP 1451135	A1	20040901	EP 2002-781420	20021129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005511677	T	20050428	JP 2003-549292	20021129
CN 1639102	A	20050713	CN 2002-827820	20021129
IN 2004DN01374	A	20070316	IN 2004-DN1374	20040521
NO 2004002809	A	20040702	NO 2004-2809	20040702
US 2006030729	A1	20060209	US 2005-239137	20050930
US 7189871	B2	20070313		

US 2007088175 A1 20070419 US 2006-541678 20061003
 PRIORITY APPLN. INFO.: US 2001-334970P P 20011204
 US 2002-303769 A3 20021126
 WO 2002-GB5415 W 20021129
 US 2005-239137 A1 20050930

AB A process for reacting in a fluid bed reactor at least one oxidizable reactant (e.g., ethane) with mol. oxygen in the presence of a catalytically active fluidized bed of solid particles is described. In this process, a mol. oxygen-containing gas having an oxygen concentration greater than that of air is introduced into the fluidized bed while the fluidized bed is maintained in a turbulent regime. The process is suitable for oxidation, ammoxidn. and esterification (i.e., manufacture of vinyl acetate from acetic acid and ethylene) processes, including the production of maleic anhydride, acrylonitrile, ethylene, acetic acid, and vinyl acetate.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:166990 CAPLUS

DOCUMENT NUMBER: 138:206859

TITLE: Increased production of acetonitrile as byproduct in ammoxidation of propylene to acrylonitrile

INVENTOR(S): Midorikawa, Hideo

PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003064042	A	20030305	JP 2001-258918	20010829
PRIORITY APPLN. INFO.:			JP 2001-258918	20010829

AB MeCN as a byproduct in manufacture of acrylonitrile (I) by catalytic ammoxidn. of propylene in a fluidized-bed reactor are prepared in higher yield by feeding ≥ 1 selected from EtOH, Et₂O, HCO₂Et, AcOH, Ac₂O, EtOAc, EtOCH₂CH₂OEt, ethylene, MeCHO, and HOCH₂CO₂Et at a carbon-base ratio to propylene 0.005-0.2 using MoyBipFeqAaBbCcDdOe (A = Ni, Co; B = K, Rb, Cs; C = Mg, Zn; D = rare earth element; y = 1.02x-1.12x; x = 1.5p + q + a + c + 1.5d; p = 0.01-5.0; q = 0.1-5; a = 4-10; b = 0.01-2; c = 0-5; d = 0-5; e is determined by valency requirements) supported on silica while controlling O₂ concentration in the outlet gas 0.1-1.5 volume%. Thus, a gas mixture containing propylene, NH₃, and air and EtOH were fed to a reactor packed with Mo11.8Bi0.45Ce0.90Fe1.8Ni5.0Mg2.0K0.09Rb0.05Oe at 430°, 150 kPa, and contact time 5.7 s·g/mL to give 82.4% I and 2.5% MeCN after 100 h, vs. 82.5 and 2.0%, resp., for a control reaction using no EtOH.

L10 ANSWER 6 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:166989 CAPLUS

DOCUMENT NUMBER: 138:206858

TITLE: Increased production of acetonitrile and prussic acid as byproducts of acetonitrile manufacture

INVENTOR(S): Midorikawa, Hideo

PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003064041	A	20030305	JP 2001-258920	20010829
PRIORITY APPLN. INFO.:			JP 2001-258920	20010829

AB MeCN and HCN as byproducts in manufacture of acrylonitrile (I) by catalytic ammoxidn. of propylene in a fluidized-bed reactor are prepared in higher yield by feeding ≥ 1 selected from EtOAc, acetone, and MeOEt at a carbon-base ratio to propylene 0.005-0.2 using $\text{MoyBipFeqAaBbCcDdOe}$ ($A = \text{Ni, Co}$; $B = \text{K, Rb, Cs}$; $C = \text{Mg, Zn}$; $D = \text{rare earth element}$; $y = 1.02x - 1.12x$; $x = 1.5p + q + a + c + 1.5d$; $p = 0.01 - 5.0$; $q = 0.1 - 5$; $a = 4 - 10$; $b = 0.01 - 2$; $c = 0 - 5$; $d = 0 - 5$; e is determined by valency requirements) supported on silica while controlling O₂ concentration in the outlet gas 0.1-1.5 volume%. Thus, a gas mixture containing propylene, NH₃, and air and acetone were fed to a reactor packed with $\text{Mol1.8Bi0.45Ce0.90Fe1.8Ni5.0Mg2.0K0.09Rb0.05Oe}$ at 430°, 150 kPa, and contact time 5.7 s·g/mL to give 82.4% I, 3.2% MeCN, and 5.5% HCN after 100 h, vs. 82.5, 2.0, and 4.0%, resp., for a control reaction using no acetone.

L10 ANSWER 7 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:14357 CAPLUS
DOCUMENT NUMBER: 138:90226
TITLE: Continuous and simultaneous manufacture of unsaturated nitrile and hydrocyanic acid
INVENTOR(S): Sano, Kazuhiko
PATENT ASSIGNEE(S): Asahi Kasei Corporation, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003002870	A	20030108	JP 2001-187699	20010621
PRIORITY APPLN. INFO.:			JP 2001-187699	20010621

AB Title compds. are manufactured in a fluidized-bed reactor by ammoxidn. of (A) propylene, isobutylene, and/or tert-butanol and (B) MeOH and/or HCHO with NH₃ and O-containing gas in the presence of $\text{MoyBipFeqAaBbCcDdOf}$ ($A = \text{Ni, Co}$; $B = \text{K, Rb, Cs}$; $C = \text{Mg, Zn}$; $D = \text{rare earth element}$; $d/(p + d) = 0.6 - 0.8$; $p + d = 0.5 - 2.0$; $q = 0.1 - 3$; $a = 4 - 10$; $b = 0.01 - 2$; $c = 0 - 3$; $x = 1.5p + q + a + c + 1.5d$; $y = 1.02x - 1.10x$) while adjusting the O concentration of the exhaust gas to 0.3-1.5 volume%. Thus, a propylene-NH₃-air mixture and gaseous MeOH were passed through $\text{Mol1.7Bi0.20Ce0.40Fe2.0Ni5.6Mg2.2K0.07Cs0.04Ox/SiO2}$ -packed reactor at O concentration 0.35 volume% for 720 h to give 80.8% acrylonitrile, 6.5% HCN, and 0.8% acrolein, vs. poor yield, when the O concentration was 0.25 volume% instead.

L10 ANSWER 8 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:666022 CAPLUS
DOCUMENT NUMBER: 140:304097
TITLE: Comparison of proposals for the remodeling of the ammoxidation reactor in an

acrylonitrile apparatus
 AUTHOR(S): Chen, Tao
 CORPORATE SOURCE: Petrochemical Plant, Lanzhou Prochemical Co.,
 PetroChina, Lanzhou, 730060, Peop. Rep. China
 SOURCE: Shihua Jishu Yu Yingyong (2003), 21(4), 273-275
 CODEN: SJYIF4; ISSN: 1009-0045
 PUBLISHER: Shihua Jishu Yu Yingyong Bianjibu
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese
 AB An MB 98 catalyst had selectivity for acrylonitrile 82.0% and
 conversion of propylene 98.5%, compared with 81.4 and 97.6, resp., for an
 MB 96 catalyst. A remodeling included a cyclone, an air distributing
 plate, a reactant distributor, and a heat release system.

L10 ANSWER 9 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:927867 CAPLUS
 DOCUMENT NUMBER: 138:26375
 TITLE: Two-stage method for gas-solid contact in bubbling
 fluidized-bed reactors for catalytic and non-catalytic
 reactions
 INVENTOR(S): Choudhary, Vasant Ramchandra; Choudhary, Tushar Vasant
 PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
 SOURCE: U.S. Pat. Appl. Publ., 10 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002179489	A1	20021205	US 2001-817744	20010326
US 6894183	B2	20050517		
US 2004122116	A1	20040624	US 2003-725723	20031202
US 7022307	B2	20060404		

PRIORITY APPLN. INFO.: US 2001-817744 A3 20010326

AB A two-stage method for contacting of gases and solids in a bubbling
 fluidized-bed reactor (for catalytic and noncatalytic reactions) was
 developed in which the first stage involves fluidization with bubbling,
 and the second stage involves the formation of the bubbling bed. In the
 first stage, a primary gas, containing the reactant(s), is introduced into the
 reactor (with bed length to bed diameter ratio $\sim 5.0:1$) through a
 primary gas distributor located at the reactor bottom at a superficial gas
 velocity, U_{mf} , that is close or equivalent to the min. fluidization velocity,
 U_{mf} , required to obtain an emulsion phase with little or no formation of
 gas bubbles. In the second stage, gas bubbles in the incipiently
 fluidized bed (formed in stage 1) are formed by introducing a secondary
 gas through a secondary gas distributor located immediately above the
 primary gas distributor. This secondary gas is selected from one of the
 reactants which is used in excess of that required for reaction
 stoichiometry (e.g., steam), at a superficial gas velocity, U_s . U_s is
 related to the U_p (of the primary gas) such that a U_s/U_p is 0.5-10.0:1,
 preferably 1-5:1. Typical reactions that can be handled by the bubbling
 fluidized bed include vapor-phase hydrogenation of nitrobenzene and
 nitrotoluene isomers to aniline and the corresponding toluidine, methane
 conversion to synthesis gas, ammoxidn. of propylene to
 acrylonitrile, propylene oxidation to acrolein, oxidation of acrolein to
 acrylic acid, regeneration of coked hydrocarbon cracking catalyst, ethane
 oxychlorination, Fischer-Tropsch reaction, and heavy oil hydrocracking.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 10 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2002:755239 CAPLUS
 DOCUMENT NUMBER: 137:263439
 TITLE: Process for recovery of olefinically unsaturated nitriles
 INVENTOR(S): Ward, Gregory J.; Monical, Valerie S.
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 6 pp., Cont.-in-part of U.S. Ser. No. 333,431, abandoned.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002143131	A1	20021003	US 2001-964296	20010920
US 6860971	B2	20050301		

PRIORITY APPLN. INFO.: US 1998-89352P P 19980615
 US 1999-333431 B2 19990615

AB A process is described for the recovery of acrylonitrile from an ammoxidn. reactor effluent stream containing acrylonitrile, water, and organic impurities. The process includes the steps of (a) quenching an ammoxidn. reactor effluent stream that includes acrylonitrile, water, and organic impurities with an aqueous quench stream, thereby producing a cooled reactor effluent stream; (b) passing the cooled reactor effluent stream through an absorption column, thereby generating an absorber bottoms stream that includes water, acrylonitrile, and organic impurities; and (c) passing the absorber bottoms stream through a single recovery/stripper column, generating an acrylonitrile-rich overhead stream, a lean water side stream, and a recovery/stripper bottoms stream that includes organic impurities. The acrylonitrile-rich overhead stream can be passed through a decanter to sep. water from acrylonitrile. The lean water side stream can be recycled for use in the absorption column.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2002:708789 CAPLUS
 DOCUMENT NUMBER: 137:203033
 TITLE: Method for stopping the ammoxidation
 INVENTOR(S): Nakamura, Toshio; Arai, Hachiro; Sawada, Yoshikazu; Yamagishi, Yoichi
 PATENT ASSIGNEE(S): Daiya Nitrics K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002265431	A	20020918	JP 2001-62256	20010306

PRIORITY APPLN. INFO.: JP 2001-62256 20010306

AB In the title method for stopping the ammoxidn. of propylene or isobutylene in a fluidized bed reactor, an inert gas (with volume 1 to 1000 times that of the catalyst bed) is supplied to the reactor after the supply of the oxygen-containing gas, ammonia and propylene or isobutylene to the reactor is stopped. Or, after the supply of ammonia and propylene

or isobutylene to the reactor is stopped, the supply of the oxygen-containing gas (with volume 0.5 to 5 times that of the catalyst bed) to the reactor is continued. Or, after the supply of propylene or isobutylene to the reactor is stopped, the supply of the oxygen-containing gas and ammonia to the reactor is continued. The title method ensures the safety of the work and prevents the deterioration of the catalyst.

L10 ANSWER 12 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:626082 CAPLUS
DOCUMENT NUMBER: 137:140912
TITLE: Catalysts pretreatment for production of acrylonitrile
INVENTOR(S): Nakamura, Toshio; Arai, Hachiro; Sawada, Yoshikazu; Yamaguchi, Masanori
PATENT ASSIGNEE(S): Daiya Nitrics K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002233759	A	20020820	JP 2001-29319	20010206
PRIORITY APPLN. INFO.:			JP 2001-29319	20010206
AB	Production method of acrylonitrile via ammoxidn. of propylene in fluidized reactor, catalysts are pretreated by filling the catalysts in the reactor with the oxygen gas concentration 6-30% at 300-450° for 1-100 h.			

L10 ANSWER 13 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:171448 CAPLUS
DOCUMENT NUMBER: 136:232678
TITLE: Process for increasing the yield of hydrocyanic acid in acrylonitrile manufacture
INVENTOR(S): Arai, Hachiro; Sawada, Yoshikazu; Nakamura, Toshio
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002069048	A	20020308	JP 2000-258803	20000829
PRIORITY APPLN. INFO.:			JP 2000-258803	20000829
AB	In the process for manufacturing acrylonitrile by ammoxidn. of propylene or propane using a fluidized layer reactor, methanol and water vapor are introduced at the speed of 5 to 70 m/s into the catalyst layer from the gas inlet located at the upper part of the fluidized layer; the water/methanol mol ratio is 0.5 to 10. The title process gives 115% increase rate in the yield of hydrocyanic acid.			

L10 ANSWER 14 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:331896 CAPLUS
DOCUMENT NUMBER: 136:342644
TITLE: Apparatus and process for heat exchange with fluid beds
INVENTOR(S): Becker, Stanley John; Fiorentino, Michele; Williams,

PATENT ASSIGNEE(S): Bruce Leo; Bristow, Timothy Crispin; Newton, David
 SOURCE: BP Chemicals Limited, UK
 Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1202017	A2	20020502	EP 2001-308291	20010928
EP 1202017	A3	20041215		
EP 1202017	B1	20060517		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002074107	A1	20020620	US 2001-964881	20010928
US 6602476	B2	20030805		
AT 326674	T	20060615	AT 2001-308291	20010928
SG 115413	A1	20051028	SG 2001-6125	20011003
IN 2001MU00980	A	20050819	IN 2001-MU980	20011008
NO 2001005219	A	20020429	NO 2001-5219	20011025
BR 2001004818	A	20020702	BR 2001-4818	20011025
JP 2002213886	A	20020731	JP 2001-328435	20011025
TW 592833	B	20040621	TW 2001-90126419	20011025
RU 2289075	C2	20061210	RU 2001-128725	20011025
CN 1350881	A	20020529	CN 2001-137515	20011026
PRIORITY APPLN. INFO.:			GB 2000-26242	A 20001026

AB Apparatus and process for heat exchange with fluid beds comprises heat-exchange tubes located longitudinally with respect to the axis of a fluidization zone with a rectangular pitch, one side of which having a length (x) at least one and a half times the length (y) of the other side and/or with a triangular pitch, having two sides each at least one and a half times the length of the shortest side reduces the impact of the heat-exchange tubes on the fluidization characteristics of the fluid bed. The invention is particularly suitable for oxidation reactions using mol. oxygen-containing gas in the presence of a fluid bed of fluidizable catalyst, such as (a) the acetoxylation of olefins, (b) the oxidation of ethylene to acetic acid and/or the oxidation of ethane to ethylene and/or acetic acid, (c) the ammoxidn. of propylene and/or propane to acrylonitrile and (d) the oxidation of C4's to maleic anhydride.

L10 ANSWER 15 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:50547 CAPLUS
 DOCUMENT NUMBER: 134:117616
 TITLE: Sparger for oxygen injection into fluidized-bed reactor
 INVENTOR(S): Trott, Louis Rocco; Gustaferrero, Robert Angelo; Hepfer, Robert Paul; Miller, Craig Timothy; Carlsson, Stig-Axel; Close, Benjamin Wayne
 PATENT ASSIGNEE(S): Standard Oil Company, USA
 SOURCE: PCT Int. Appl., 23 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001003823	A1	20010118	WO 2000-US14981	20000531

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
 CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
 ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
 LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
 SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6358483	B1	20020319	US 1999-352465	19990713
CA 2379141	A1	20010118	CA 2000-2379141	20000531
BR 2000012412	A	20020402	BR 2000-12412	20000531
EP 1194224	A1	20020410	EP 2000-937988	20000531
EP 1194224	B1	20041215		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO

TR 200200030	T2	20021121	TR 2002-30	20000531
JP 2003504180	T	20030204	JP 2001-509288	20000531
RU 2238139	C2	20041020	RU 2002-102863	20000531
AT 284752	T	20050115	AT 2000-937988	20000531
ES 2232458	T3	20050601	ES 2000-937988	20000531
RO 121321	B1	20070330	RO 2002-28	20000531
TW 527219	B	20030411	TW 2001-90100786	20010112
ZA 2002000192	A	20030409	ZA 2002-192	20020109
BG 106300	A	20020930	BG 2002-106300	20020114
BG 64438	B1	20050228		
IN 2002MN00048	A	20060915	IN 2002-MN48	20020115

PRIORITY APPLN. INFO.:

US 1999-352465	A	19990713
WO 2000-US14981	W	20000531

AB A sparger includes a conduit for conducting an oxygen feed, a nozzle connected to the conduit for passage of the oxygen feed from the conduit to the outside of the sparger, the nozzle including an orifice and a shroud, and insulation surrounding the conduit and also the shroud substantially the full length of the shroud. A method is provided for producing acrylonitrile via propane ammoxidn., comprising introducing propane and ammonia feeds into a fluidized-bed reactor, and introducing an oxygen feed into the fluid bed through at least one insulated and jacketed sparger nozzle for reacting with at least one of the propane feed and ammonia feed in the presence of a fluid bed catalyst.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 16 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:718962 CAPLUS

DOCUMENT NUMBER: 135:274550

TITLE: Operation of heads column for the recovery of acrylonitrile, methacrylonitrile or hydrogen cyanide

INVENTOR(S): Godbole, Sanjay P.

PATENT ASSIGNEE(S): The Standard Oil Company, USA

SOURCE: U.S., 6 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6296739	B1	20011002	US 1999-227665	19990108
WO 2003018541	A1	20030306	WO 2001-US26104	20010821

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
 RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,
 VN, YU, ZA, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 AU 2001285149 A1 20030310 AU 2001-285149 20010821
 EP 1419140 A1 20040519 EP 2001-964272 20010821
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 BR 2001017105 A 20040817 BR 2001-17105 20010821
 CN 1545499 A 20041110 CN 2001-823567 20010821
 JP 2005501119 T 20050113 JP 2003-523205 20010821
 RU 2263108 C1 20051027 RU 2004-107845 20010821
 US 2002029952 A1 20020314 US 2001-945228 20010831
 US 6793776 B2 20040921
 ZA 2004001115 A 20041118 ZA 2004-1115 20040211
 IN 2004DN00346 A 20060310 IN 2004-DN346 20040216
 MX 2004PA01556 A 20040517 MX 2004-PA1556 20040219
 PRIORITY APPLN. INFO.: US 1999-227665 A 19990108
 WO 2001-US26104 W 20010821

AB A process for the recovery of acrylonitrile, methacrylonitrile
 or hydrogen cyanide obtained from the reactor effluent of an ammoxidn.
 reaction of propane, propylene or isobutylene comprises passing the
 reactor effluent through an absorber column, a recovery column and a heads
 column comprising a feed tray wherein the improvement comprises operating
 the heads column in a manner which inhibits the formation of an aqueous phase
 above the feed tray of the heads column; wherein the operating manner of
 the heads column comprises feeding more hydrogen cyanide to the heads
 column to achieve conditions equivalent to higher reflux ratio and wherein the
 feeding is selected from the group consisting of (a) recycling purified
 HCN to the heads column and (b) operating the ammoxidn.
 reactor, in a manner to produce the reactor effluent with
 high concentration of HCN.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10. ANSWER 17 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:918856 CAPLUS
 DOCUMENT NUMBER: 136:39565
 TITLE: Three-phase fluidized-bed reactors with separate
 inlets for injection of liquids and gases
 INVENTOR(S): Bristow, Timothy Crispin; Clarke, Robert William;
 Williams, Bruce Leo; Reid, Ian Allan Beattie; Newton,
 David; Fiorentino, Michele; Becker, Stanley John
 PATENT ASSIGNEE(S): BP Chemicals Limited, UK
 SOURCE: Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1163954	A2	20011219	EP 2001-304480	20010522
EP 1163954	A3	20040114		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
SG 101977	A1	20040227	SG 2001-3331	20010604
IN 2001MU00529	A	20050812	IN 2001-MU529	20010606

US 2002016374	A1	20020207	US 2001-877227	20010611
US 6913734	B2	20050705		
NO 2001002909	A	20011217	NO 2001-2909	20010613
JP 2002053498	A	20020219	JP 2001-179397	20010613
BR 2001002385	A	20020430	BR 2001-2385	20010613
TW 233838	B	20050611	TW 2001-90114262	20010613
RU 2257374	C2	20050727	RU 2001-115767	20010613
CN 1328871	A	20020102	CN 2001-121016	20010614
US 2005209101	A1	20050922	US 2005-124141	20050509
PRIORITY APPLN. INFO.:			GB 2000-14584	A 20000614
			US 2001-877227	A3 20010611

AB A fluidized-bed reactor for heterogeneous gas-phase reactions involves contacting a gaseous reactant with at least one liquid (e.g., a second reactant or a coolant) in the presence of a solid catalyst fluidized bed, in which the injection of gas(es) is carried out through a sep. inlet from that for liqs. The apparatus can be used for oxidation reactions, such as oxidation of ethane to ethylene or acetic acid, oxidation of ethylene to acetic acid, acetoxylation of ethylene to vinyl acetate, ammoxidn. of propylene or propane to acrylonitrile, and the oxidation of C4-hydrocarbons to maleic anhydride.

L10 ANSWER 18 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:918855 CAPLUS

DOCUMENT NUMBER: 136:39564

TITLE: Inert gas for introduction of oxygen-containing feed gas into fluidized-bed oxidation reactors and process for oxidation reactions

INVENTOR(S): Bristow, Timothy Crispin; Clarke, Robert William; Williams, Bruce Leo; Colman, Derek Alan; Reid, Ian Allan Beattie; Newton, David; Becker, Stanley John

PATENT ASSIGNEE(S): BP Chemicals Limited, UK

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1163953	A2	20011219	EP 2001-304485	20010522
EP 1163953	A3	20040114		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2349807	A1	20011214	CA 2001-2349807	20010530
SG 100717	A1	20031226	SG 2001-3329	20010604
US 2002006368	A1	20020117	US 2001-877249	20010611
JP 2002058989	A	20020226	JP 2001-179396	20010613
BR 2001002384	A	20020423	BR 2001-2384	20010613
TW 541206	B	20030711	TW 2001-90114268	20010613
CN 1328989	A	20020102	CN 2001-121017	20010614

PRIORITY APPLN. INFO.: GB 2000-14580 A 20000614

AB A reactor, especially for fluidized-bed heterogeneous oxidation reactions, is equipped with an inlet pipe, for introduction of a mol. oxygen-containing gas reactant, that is surrounded by an inert fluid (i.e., an inert gas). This inlet pipe also has a means for suppressing any entry of reactor contents (e.g., flame, reagents, catalysts, products, etc.) into the inlet pipe that would react with the mol. oxygen-containing reactant prior to entrance into the reactor. The apparatus can be used for oxidation reactions, such as oxidation of ethane to ethylene or acetic acid, oxidation of ethylene to acetic acid, acetoxylation of ethylene to vinyl acetate, ammoxidn. of propylene

or propane to acrylonitrile, and the oxidation of C4-hydrocarbons to maleic anhydride.

L10 ANSWER 19 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:128803 CAPLUS

DOCUMENT NUMBER: 134:224572

TITLE: A pilot plant study and 2-D dispersion-reactor model for a high-density riser reactor

AUTHOR(S): Wei, F.; Wan, X.; Hu, Y.; Wang, Z.; Yang, Y.; Jin, Y.

CORPORATE SOURCE: Department of Chemical Engineering, Tsinghua

University, Beijing, 100084, Peop. Rep. China

SOURCE: Chemical Engineering Science (2001), 56(2), 613-620

CODEN: CESCAC; ISSN: 0009-2509

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The radial concentration profiles of reactant concns. in a pilot plant high-d. riser propylene ammoxidn. reactor were sampled and analyzed and the extreme maldistribution of the profiles were found. A two-dimensional dispersion-reactor model was proposed to simulate the selective oxidization that taken place in the riser, which considered the influences of axial and lateral gas mixing, the non-uniformity of radial solids concentration and gas-velocity profiles on the reactor. The model can successfully predict the axial and radial profiles of concns. sampled in the pilot plant. Simulation results indicate that the non-uniformity in radial catalyst concentration and gas-velocity distribution as well as insufficient lateral gas mixing result in a significant loss of selectivity and yield of acrylonitrile. The scale-up effect and the interdependence of the reaction rate, the non-uniformity of catalyst concentration and the requirement of gas mixing are discussed.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 20 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:725841 CAPLUS

DOCUMENT NUMBER: 133:270789

TITLE: Apparatus and process for monitor and control of an ammoxidation reactor with a Fourier transform infrared spectrometer

INVENTOR(S): Casal, Hector L.; Azker, Nazaneen; Seely, Michael J.; Nero, Linda L.; Baldwin, Jean A.

PATENT ASSIGNEE(S): Bp Amoco Corp., USA

SOURCE: PCT Int. Appl., 65 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060336	A1	20001012	WO 2000-US8414	20000329
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
DE 10084432	T0	20020321	DE 2000-10084432	20000329

TW 475059	B	20020201	TW 2000-89106074	20000412
US 2002055175	A1	20020509	US 2001-945464	20010830
US 6607447	B2	20030819		
US 2004023407	A1	20040205	US 2003-624022	20030721
PRIORITY APPLN. INFO.:			US 1999-282934	A 19990401
			WO 2000-US8414	W 20000329
			US 2001-945464	A3 20010830

AB The present invention is a method and an apparatus for identifying and quantifying components in an effluent stream from an ammoxidn. reactor. The apparatus comprises a microprocessor and a Fourier Transform IR spectrometer, wherein the microprocessor is programmed to identify and quantify each of the plurality of components based upon the absorbance data and calibration data, the calibration data being obtained from recovery run analyses and calibration analyses in the sample cell. The Fourier Transform IR spectrometer has a sample cell through which may flow a portion of the effluent stream, an IR source to emit IR radiation and pass the IR radiation through the effluent stream, an IR detector to detect transmitted IR radiation at the selected IR wavelengths and to generate absorbance data due to absorbance of the IR radiation by the components, wherein each of the components absorbs IR radiation at one or more of the IR wavelengths, and an output apparatus to provide the absorbance data to the microprocessor. The apparatus is used in this case to analyze acrylonitrile reactor effluents. The method may be applied to utilize the apparatus to provide real-time control of the operation of an ammoxidn. reactor, based on the anal. results obtained by the FT-IR spectrometer and the calibration model developed therefor.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 21 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:784407 CAPLUS

DOCUMENT NUMBER: 133:335634

TITLE: Hybrid ammoxidation reactor and ammoxidation process for propylene conversion into acrylonitrile

INVENTOR(S): Zhou, Lubo; Dennler, W. Patrick; Oroskar, Anil R.; Vora, Bipin V.; Abrevaya, Hayim; Stine, Laurence O.

PATENT ASSIGNEE(S): UOP LLC, USA

SOURCE: U.S., 15 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6143915	A	20001107	US 1998-198300	19981123
US 6649130	B1	20031118	US 2000-635953	20000810
PRIORITY APPLN. INFO.:			US 1998-198300	A3 19981123

AB A hybrid reactor arrangement provides a reactive design that achieves higher acrylonitrile yield and lower catalyst circulating rate. The hybrid reactor design first passes a mixture of reactants and catalyst through a circulating bubbling bed reaction section. Heat-exchange coils or other cooling medium in the bubbling bed reactor section maintain

temperature

in a range that will maximize the selectivity of reactants to the acrylonitrile product. The bubbling bed reactor section provides the initial conversion of the reactant. A circulating fluidized bed reaction zone finishes the conversion of reactants to a high yield under conditions that reduce the occurrence of secondary reactions that could otherwise produce unwanted byproducts. The circulating fluidized bed

reactor section maintains nearly plug flow conditions that allow continued conversion of unreacted feed components through primary reactions while limiting the time for secondary reactions to continue and diminish the final yield of products. Selectivity and conversion may also be improved by sequential addition of oxygen into the CFB reaction section. The sequential addition of oxygen may occur by the direct injection of an oxygen-containing gas or by the delivery of re-oxidized catalyst particles that are fully recharged with the lattice oxygen necessary for the reaction.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 22 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:158434 CAPLUS
DOCUMENT NUMBER: 132:168252
TITLE: Neural network model based on partial least square for fluidized bed reactor
AUTHOR(S): Ding, Li-hua; Luo, Bao-lin; Luo, Wei
CORPORATE SOURCE: Petrochemical Institute, East China University of Science and Technology, Shanghai, 200540, Peop. Rep. China
SOURCE: Shiyou Huagong (2000), 29(2), 121-125
CODEN: SHHUE8; ISSN: 1000-8144
PUBLISHER: Shiyou Huagong Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB Partial least square(PLS) is capable of projecting the information in high dimensional space down to low dimensional space and neural networks have universal approximation nonlinear property. The paper discusses the combination algorithm of neural network and PLS. A neural network model of the fluidized bed reactor based on partial least square proposed by using the exptl. data of the fluidized bed reactor for the synthesis of acrylonitrile from ammoxidn. of propylene. The simulation results show the proposed model is effective.

L10 ANSWER 23 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:811125 CAPLUS
DOCUMENT NUMBER: 132:36173
TITLE: Recovery of acrylonitrile
INVENTOR(S): Ward, Gregory J.; Monical, Valerie S.
PATENT ASSIGNEE(S): Solutia Inc., USA
SOURCE: PCT Int. Appl., 12 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9965583	A1	19991223	WO 1999-US13503	19990615
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9948232	A	20000105	AU 1999-48232	19990615
BR 9911267	A	20010313	BR 1999-11267	19990615
TR 200003767	T2	20010321	TR 2000-200003767	19990615

EP 1093389	A1	20010425	EP 1999-931802	19990615
EP 1093389	B1	20040324		
R: DE, ES, IT, NL				
JP 2002518353	T	20020625	JP 2000-554455	19990615
RU 2210566	C2	20030820	RU 2001-101465	19990615
ES 2214864	T3	20040916	ES 1999-931802	19990615
RO 121093	B1	20061229	RO 2000-1238	19990615
BG 105057	A	20011130	BG 2000-105057	20001215
BG 64862	B1	20060731		
MX 2000PA12649	A	20011011	MX 2000-PA12649	20001218
PRIORITY APPLN. INFO.:			US 1998-89352P	P 19980615
			WO 1999-US13503	W 19990615

AB A process for the recovery of acrylonitrile from an ammoxidn. reactor effluent stream containing acrylonitrile, water, and organic impurities includes passing an absorber bottoms stream through a single recovery/stripper column, generating an acrylonitrile-rich overhead stream, a lean water side stream, and a recovery/stripper bottoms stream containing organic impurities, wherein the acrylonitrile-rich overhead stream is passed into a condenser and into a decanter to sep. water from the acrylonitrile. The process can achieve the desired level of product recovery without requiring both a recovery distillation column and a stripper distillation column.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 24 OF 61 CAPLUS. COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:90417 CAPLUS

DOCUMENT NUMBER: 130:110732

TITLE: Oxygen addition in an ammoxidation reaction to reduce inert product formation in an acrylonitrile reactor

INVENTOR(S): Wagner, Matthew Lincoln

PATENT ASSIGNEE(S): Praxair Technology, Inc., USA

SOURCE: Eur. Pat. Appl., 5 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 893435	A2	19990127	EP 1998-113828	19980723
EP 893435	A3	19991229		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5883281	A	19990316	US 1997-898856	19970725
CN 1206708	A	19990203	CN 1998-116157	19980722
CA 2243871	A1	19990125	CA 1998-2243871	19980723
BR 9802595	A	20001205	BR 1998-2595	19980723
PRIORITY APPLN. INFO.:			US 1997-898856	A 19970725

AB A process for increasing the yield of an ammoxidn. product by passing a feed into a reactor, passing an oxygen-containing gas stream containing a portion of inerts into the reactor, passing a substantially pure oxygen stream into the reactor, and reducing the flow of the oxygen-containing gas stream while increasing the flow of the substantially pure oxygen stream, where the total rate of flow of oxygen from the oxygen-containing gas stream and the substantially pure oxygen stream is maintained in an effective amount to produce the ammoxidn. product such that the flow of inert materials passing into the reactor is reduced.

L10 ANSWER 25 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 1999:511972 CAPLUS

DOCUMENT NUMBER: 131:242896

TITLE: Propane ammoxidation on an Al-Sb-V-W oxide catalyst. A mechanistic study using the TAP-2 reactor system

AUTHOR(S): Hinz, Andreas; Andersson, Arne

CORPORATE SOURCE: Department of Chemical Engineering II, Chemical Center, Lund University, Lund, S-221 00, Swed.

SOURCE: Chemical Engineering Science (1999), 54(20), 4407-4421
CODEN: CESCAC; ISSN: 0009-2509

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The reaction mechanism of propane ammoxidn. was studied on an Al-Sb-V-W oxide catalyst using a TAP-2 reactor system. Analyses of the responses from both high-speed pulse transients with reactants and TPD expts. were performed. Since the ammoxidn. process with three reactants proceeds from propane to acrylonitrile over propylene as an intermediate, the expts. comprised oxidation of propylene, oxidation of ammonia, ammoxidn. of propylene, oxidation of propane, and ammoxidn. of propane. The results show that propane is irreversibly adsorbed at the surface forming propylene, which desorbs. Propylene then readsorbs forming an intermediate allyl species, which reacts with lattice oxygen to give acrolein. Acrolein is unstable and some of it reacts further to produce either carbon oxides, or, acrylonitrile. Formation of the nitrile occurs by adsorbed acrolein reacting with an NH_x species. The latter species is short-lived and reacts competitively to form N₂, N₂O and NO. Lattice oxygen plays an important role in the pathway to acrylonitrile. However, weakly adsorbed oxygen species are also present at the catalyst surface, and these species participate in degradation routes producing waste products. Consideration of the mechanistic scheme which is derived from the exptl. results shows the possibility to achieve improvement of the ammoxidn. process by using either a recirculating solids reactor, or a high propane/oxygen ratio in the feed.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 26 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:47696 CAPLUS

DOCUMENT NUMBER: 130:223615

TITLE: Improving conversion and selectivity of catalytic reactions in bubbling gas-solid fluidized bed reactors by control of the nonlinear bubble dynamics

AUTHOR(S): Kaart, Sander; Schouten, Jaap C.; van den Bleek, Cor M.

CORPORATE SOURCE: Department of Chemical Process Technology, Delft University of Technology, Delft, 2628 BL, Neth.

SOURCE: Catalysis Today (1999), 48(1-4), 185-194
CODEN: CATTEA; ISSN: 0920-5861

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A model is presented that is a dynamic extension of the classic two-phase reactor models used to predict conversion and selectivity of fluidized reactors. The most important part of the model is a dynamic discrete bubble model that can correctly predict bubble sizes and also exhibits chaotic dynamics. The model is used to predict the effect of changed bubble dynamics on the catalytic ammoxidn. of propylene to acrylonitrile (Sohio process). Both conversion and selectivity are appreciably enhanced.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 27 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:76792 CAPLUS
DOCUMENT NUMBER: 130:223622
TITLE: Macroscopic regressive model of a fluidized-bed reactor for synthesizing acrylonitrile by ammoxidation of propylene
AUTHOR(S): Luo, Baolin; Yu, Jiangping; Fan, Zheng; Liu, Jinzhong
CORPORATE SOURCE: Inst. Chem. Metall., Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Huagong Yejin (1999), 20(1), 44-50
CODEN: HUYEEF; ISSN: 1001-2052
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The kinetic behavior of the ammoxidn. of propylene was exptl. investigated and a math. model of reaction conversion rate and yield with power function is proposed. Using operating data from an industrial reactor and considering the effect of gas-solid flow in the reactor, the Marquardt method for nonlinear regression was used for establishing a macroscopic math. model of a fluidized-bed reactor for the preparation of acrylonitrile. The model fits exptl. data quite well with relative error <10%.

L10 ANSWER 28 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:774318 CAPLUS
DOCUMENT NUMBER: 129:344717
TITLE: Recovery of hydrogen cyanide from acrylonitrile- and/or methacrylonitrile-manufacture ammoxidation process effluent streams
INVENTOR(S): Sockell, Edward J.; Sarna, Joseph C.; Kerr, Ali; Godbole, Sanjay P.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5840955	A	19981124	US 1997-977762	19971125
EP 919543	A2	19990602	EP 1998-307118	19980904
EP 919543	A3	20020807		
EP 919543	B1	20051123		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 310720	T	20051215	AT 1998-307118	19980904
ES 2252818	T3	20060516	ES 1998-307118	19980904
IN 1998DE02652	A	20050826	IN 1998-DE2652	19980907
BR 9803782	A	19991214	BR 1998-3782	19980914
CN 1225921	A	19990818	CN 1998-119533	19980917
CN 1117072	B	20030806		
TW 408101	B	20001011	TW 1998-87115520	19980917
JP 11199559	A	19990727	JP 1998-265524	19980918
PRIORITY APPLN. INFO.:			US 1997-977762	A 19971125
AB A process for the enhanced recovery of hydrogen cyanide obtained from the reactor effluent of an ammoxidn. reaction of propylene or isobutylene comprises passing the reactor effluent through a quench column, an absorber column, a first distillation column, a second distillation				

column, a cooler, and a knock-out pot, where the improvement consists of contacting the vapor phase containing the hydrogen cyanide with an aqueous stream.

This method achieves a higher degree of recovery of hydrogen cyanide, which is very useful as an industrial intermediate, than do prior-art processes and thus improves ammoxidn. process economics.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 29 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:217447 CAPLUS

DOCUMENT NUMBER: 128:230822

TITLE: Ammoxidation in fluidized-bed reactors

INVENTOR(S): Nakamura, Toshio; Murata, Hiroshi; Nishijima, Katsumasa; Yamaguchi, Masanori; Sawada, Yoshikazu

PATENT ASSIGNEE(S): Nitto Kagaku Kogyo K. K., Japan

SOURCE: Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 832877	A2	19980401	EP 1997-307483	19970924
EP 832877	A3	19990127		
EP 832877	B1	20011121		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11043323	A	19990216	JP 1997-210220	19970722
JP 10152463	A	19980609	JP 1997-207637	19970801
JP 3091168	B2	20000925		
ES 2166953	T3	20020501	ES 1997-307483	19970924
NL 1007120	A1	19980326	NL 1997-1007120	19970925
NL 1007120	C2	19990223		
US 6057471	A	20000502	US 1997-936911	19970925
PRIORITY APPLN. INFO.:			JP 1996-253491	A 19960925
			JP 1997-210220	A 19970722
			JP 1997-207637	A 19970801

AB MeOH and hydrocarbons such as propylene and isobutylene are ammoxidized in a fluidized-bed reactor to which an oxygen-containing gas is fed through feed openings provided at the bottom thereof, and a starting material to be ammoxidized is fed through feed openings provided above the feed openings for the oxygen-containing gas, the distance between the feed openings for the oxygen-containing gas and those for the starting material being from 30 to 250% of the height of a fluidized solid matter in a static state so as to form such a fluidized bed that the d. of the fluidized solid matter at the feed openings for the starting material to be ammoxidized is in the range of 50 to 300 kg/m³ and that the gas velocity is 1 m/s or lower. By this method, the efficiency of contact between catalyst particles and a starting material, and the result of the reaction (the yield of a desired product) are improved. HCN and acrylonitrile are manufactured from MeOH and propylene, resp.

L10 ANSWER 30 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1998:230402 CAPLUS

DOCUMENT NUMBER: 128:257709

TITLE: Review on fluidized bed reactor for propene ammoxidation

AUTHOR(S): Hong, Hui

CORPORATE SOURCE: Technology Development Center, SINOPEC, Beijing,
100029, Peop. Rep. China
SOURCE: Shiyou Huagong (1998), 27(3), 221-225
CODEN: SHHUE8; ISSN: 1000-8144
PUBLISHER: Beijing Huagong Yanjiuyuan
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review with 13 refs. on fluidized-bed reactors for ammoxidn. of propene
to acrylonitrile.

L10 ANSWER 31 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:503567 CAPLUS
DOCUMENT NUMBER: 127:123277
TITLE: Method for preparing vanadium-based
ammoxidation catalysts for a fluidized-bed or
moving-bed reactor
INVENTOR(S): Blanchard, Gilbert; Burattin, Paolo; Cavani, Fabrizio;
Masetti, Stefano; Trifiro, Ferruccio
PATENT ASSIGNEE(S): Rhone-Poulenc Fiber and Resin Intermediates, Fr.
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9723287	A1	19970703	WO 1996-FR2022	19961218
W: CA, CN, JP, KR, MX, SG, VN				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2742678	A1	19970627	FR 1995-15783	19951222
FR 2742678	B1	19980220		
TW 415855	B	20001221	TW 1996-85115527	19961216
CA 2239102	A1	19970703	CA 1996-2239102	19961218
CA 2239102	C	20010619		
EP 876210	A1	19981111	EP 1996-942424	19961218
EP 876210	B1	20010425		
R: BE, DE, FR, GB, IT, NL				
CN 1205654	A	19990120	CN 1996-199203	19961218
CN 1084221	B	20020508		
JP 2000500699	T	20000125	JP 1997-523355	19961218
JP 3320423	B2	20020903		
US 6200926	B1	20010313	US 1996-769446	19961219
PRIORITY APPLN. INFO.:			FR 1995-15783	A 19951222
			US 1996-15479P	P 19960412
			WO 1996-FR2022	W 19961218

AB Alkane ammoxidn. catalysts including mixed oxides based on vanadium,
antimony and optionally tin and/or titanium and/or iron and/or other
metals on a carrier are prepared by impregnating a solid oxide carrier with
a solution of resp. vanadium, antimony or optionally tin and/or titanium
and/or iron and/or other metal compds. in at least one saturated alc.,
contacting the resulting impregnated solid carrier with an aqueous buffer
solution having a pH of 6 to 8, separating and drying the solid, and calcining
the solid in two stages, firstly at 300-350 °C, and then at 400-800
°C. Such catalysts are suitable for use in a fluidized or moving
bed. Propane was ammoxidized to acrylonitrile using a VSb5Sn5Ox
catalyst.

L10 ANSWER 32 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:15739 CAPLUS

DOCUMENT NUMBER: 128:89221
 TITLE: Acrylonitrile recovery process
 INVENTOR(S): Wachtendorf, Paul Trigg; Godbole, Sanjay Parushottam;
 Rinker, Jeffrey Earle
 PATENT ASSIGNEE(S): Standard Oil Co., USA
 SOURCE: U.S., 3 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5703268	A	19971230	US 1996-629129	19960408
JP 11035543	A	19990209	JP 1997-182828	19970708
EP 891967	A1	19990120	EP 1997-305416	19970718
EP 891967	B1	20060927		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9704100	A	19990202	BR 1997-4100	19970725
CN 1207386	A	19990210	CN 1997-117371	19970806
CN 1121382	B	20030917		
TW 394755	B	20000621	TW 1997-86111238	19970806
RU 2196766	C2	20030120	RU 1997-113680	19970806
RO 120908	B1	20060929	RO 1997-1489	19970806
PRIORITY APPLN. INFO.:			US 1996-629129	A 19960408

AB In a process for the recovery of CH₂:CHCN or CH₂:CMeCN obtained from the reactor effluent of an ammoxidn. reaction of propylene or isobutylene comprising passing the reactor effluent through an absorber column and recovery column and stripper column, the improvement comprises increasing the recovery column top pressure by mech. means by 0.1-5 psi to improve the hydraulic capacity of the recovery and stripper columns.

L10 ANSWER 33 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1997:342011 CAPLUS
 DOCUMENT NUMBER: 126:317181
 TITLE: Acrylonitrile and methacrylonitrile preparation and recovery process
 INVENTOR(S): Gibson, James S.; Rinker, Jeffrey E.; Wachtendorf, Paul T.; Godbole, Sanjay P.
 PATENT ASSIGNEE(S): Standard Oil Company, USA
 SOURCE: U.S., 4 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5629444	A	19970513	US 1996-659480	19960606
IN 1997DE00020	A	20050701	IN 1997-DE20	19970103
BR 9700013	A	19981110	BR 1997-13	19970106
ZA 9700104	A	19970716	ZA 1997-104	19970107
EP 811609	A2	19971210	EP 1997-300387	19970121
EP 811609	A3	19990113		
EP 811609	B1	20010620		
R: DE, ES, GB, IT, NL				
ES 2158448	T3	20010901	ES 1997-300387	19970121
JP 10007639	A	19980113	JP 1997-12993	19970127

BG 62927	B1	20001130	BG 1997-101172	19970127
RO 118202	B1	20030328	RO 1997-145	19970127
TW 438743	B	20010607	TW 1997-86100910	19970128
RU 2178410	C2	20020120	RU 1997-101165	19970128
CN 1167757	A	19971217	CN 1997-102511	19970129
CN 1090175	B	20020904		

PRIORITY APPLN. INFO.: US 1996-659480 A 19960606

AB A process for the recovery of acrylonitrile or methacrylonitrile, obtained from the reactor effluent of an ammoxidn. reaction of propylene or isobutylene, comprises passing the reactor effluent through an absorber column, a first decanter, a recovery column, a second decanter, and a stripper column, where the process improvement comprises maintaining the inside temperature of the first and second decanters at 32-75°F. A process flow diagram is presented.

L10 ANSWER 34 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:607475 CAPLUS
 DOCUMENT NUMBER: 125:222731
 TITLE: Process for producing unsaturated nitriles
 INVENTOR(S): Someya, Ken; Midorikawa, Hideo
 PATENT ASSIGNEE(S): Asahi Kasei Kogyo Kabushiki Kaisha, Japan
 SOURCE: PCT Int. Appl., 24 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9623766	A1	19960808	WO 1996-JP148	19960126
W: CN, JP, KR, RU, SG, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
IN 184881	A1	20001007	IN 1996-CA106	19960122
EP 807622	A1	19971119	EP 1996-901123	19960126
EP 807622	B1	20020731		
R: DE, ES, IT, NL				
CN 1172472	A	19980204	CN 1996-191708	19960126
CN 1070172	B	20010829		
JP 3270479	B2	20020402	JP 1996-523403	19960126
ES 2180728	T3	20030216	ES 1996-901123	19960126
US 6013825	A	20000111	US 1997-875898	19970930
PRIORITY APPLN. INFO.:			JP 1995-32865	A 19950131
			WO 1996-JP148	W 19960126

AB A process for producing unsatd. nitriles such as acrylonitrile or methacrylonitrile by the ammoxidn. of organic compds. such as propylene, isobutene or tert-butanol, comprises conducting ammoxidn. in a reactor by controlling the ratio of the organic acids to the unreacted ammonia in the gas formed in the reaction to be in the range of 0.8-3.0, and leading the formed gas to a quenching tower, where the unreacted ammonia is reacted with the organic acids formed in the reactor to thereby fix the ammonia in the form of ammonium salts of the acids.

L10 ANSWER 35 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1996:325662 CAPLUS
 DOCUMENT NUMBER: 125:11510
 TITLE: Development and modeling of a loop fluidized bed reactor with baffle for propylene ammoxidation
 AUTHOR(S): Chen, B. H.; Dai, Q. L.; Lu, D. W.
 CORPORATE SOURCE: Department of Chemical Engineering, Zhejiang University, HangZhou, 310027, Peop. Rep. China

SOURCE: Chemical Engineering Science (1996), 51(11), 2983-2988
CODEN: CESCAC; ISSN: 0009-2509
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A loop, with baffle, fluidized bed reactor (LBR) is proposed in this work. The reactor is developed to match the redox reaction mechanism of catalytic propylene ammoxidn. to acrylonitrile. According to its developmental concept, it is able to be applied not only in acrylonitrile synthesis via propylene ammoxidn. but also in most of olefins selective ammoxidn. and oxidation reactions. In this paper, the relationship between mass transfer coefficient, catalyst recycle rate and the internal structure, operating conditions are investigated in a $\Phi 300$ mm cold model fluidized bed. The math. model is built up for the reactor. The computational results for propylene ammoxidn. based on this model show reasonable good agreement with the $\Phi 219$ mm pilot plant data. The prediction of larger scale plant based on this model has been done, and the $\Phi 2800$ mm pilot plant data. The prediction of larger scale plant based on this model has been done, and the $\Phi 2800$ mm pilot plant data are listed in this paper. The LBR is capable of increasing more than 2.5% selectivity to acrylonitrile when compared with the com. type reactor when it is employed in propylene ammoxidn.

L10 ANSWER 36 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:192557 CAPLUS
DOCUMENT NUMBER: 120:192557
TITLE: Process for the production of unsaturated nitriles from a mixture of an alkene and an alkane
INVENTOR(S): Ramachandran, Ramakrishnan
PATENT ASSIGNEE(S): BOC Group, Inc., USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5268497	A	19931207	US 1992-840363	19920224
ZA 9300281	A	19931025	ZA 1993-281	19930115
JP 06009532	A	19940118	JP 1993-33418	19930223

PRIORITY APPLN. INFO.: US 1992-840363 A 19920224

AB The alkene in the feed mixture is converted to unsatd. nitrile by reaction with the oxygen and ammonia in the presence of a suitable catalyst in an ammoxidn. reactor; the nitrile product is recovered from the product stream; some of the byproduct carbon oxides and some of the inert gas introduced into the system with the reactants are removed from product stream and the remainder of the stream, now rich in unreacted alkene and alkane, and containing the rest of the byproduct gases and inert gases is introduced into a reactor which contains a catalyst that causes alkane contained in the gas stream to convert to the corresponding alkene. The effluent from the dehydrogenation reactor is recycled to the ammoxidn. reactor. A simulated feed containing 93 vol% C₃H₆ and 7% C₃H₈ was converted to acrylonitrile with conversion and selectivity 96 and 78, resp., and to C₃H₆ with conversion and selectivity 40 and 93%, resp.

L10 ANSWER 37 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1994:194507 CAPLUS
DOCUMENT NUMBER: 120:194507
TITLE: Production of unsaturated nitriles from alkenes and

INVENTOR(S): alkanes
 Ramachandran, Ramakrishnan
 PATENT ASSIGNEE(S): BOC Group, Inc., USA
 SOURCE: U.S., 7 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5264608	A	19931123	US 1992-840484	19920224
ZA 9300248	A	19931025	ZA 1993-248	19930114
JP 06009533	A	19940118	JP 1993-33420	19930223
PRIORITY APPLN. INFO.:			US 1992-840484	A 19920224

AB A feed stream containing a mixture of an alkene and an alkane is converted to unsatd. nitrile by reaction with the oxygen and ammonia in the presence of a suitable catalyst in a first ammoxidn. reactor; the nitrile product is recovered from the product stream; some of the byproduct carbon oxides and some of the inert gas introduced into the system with the reactants are removed from product stream and the remainder of this stream, now rich in unreacted alkene and alkane, and containing the rest of the byproduct gases and inert gases is introduced with addnl. oxygen-containing gas and ammonia into a second ammoxidn. reactor which contains a catalyst that catalyzes reaction between the alkane, oxygen and ammonia to produce addnl. unsatd. nitrile. The effluent from the second ammoxidn. reactor is fully recycled to the first ammoxidn. reactor or to the nitrile recovery unit or it is split into 2 streams, one of which is recycled to the first ammoxidn. reactor and the other of which is recycled to the nitrile recovery unit. A feed stream containing C₃H₆ 7.5, O 17.5, N 66.1, C₃H₈ 0.6, and NH₃ 8.3% was converted in a 1st vapor phase fluidized bed reactor packed with supported mixed Fe-Sb oxides and then in a 2nd reactor packed with supported mixed V-Sb oxides, giving acrylonitrile with selectivity 67 and C₃H₆ conversion 96 in the 1st reactor and 60 and C₃H₈ conversion 67% in the 2nd reactor, resp.

L10 ANSWER 38 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:229611 CAPLUS
 DOCUMENT NUMBER: 114:229611
 TITLE: Apparatus for preparing α,β -unsaturated nitriles by ammoxidation
 INVENTOR(S): Muroya, Hiroaki; Ishii, Kanji; Ohta, Masanobu; Tanaka, Tetsuo
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9104961	A1	19910418	WO 1990-JP1279	19901004
W: CA, KR, SU, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
JP 03120247	A	19910522	JP 1989-257899	19891004
JP 03123767	A	19910527	JP 1989-258908	19891005
CA 2042584	A1	19910405	CA 1990-2042584	19901004
CA 2042584	C	19931109		

EP 446379 A1 19910918 EP 1990-914763 19901004
 EP 446379 B1 19940406
 R: DE, ES, FR, GB, IT, NL
 ES 2051025 T3 19940601 ES 1990-914763 19901004
 SU 1829957 A3 19930723 SU 1991-4895746 19910603
 PRIORITY APPLN. INFO.: JP 1989-257899 A 19891004
 JP 1989-258908 A 19891005
 WO 1990-JP1279 W 19901004

AB A reactor for the preparation of acrylonitrile or methacrylonitrile by gas-phase ammoxidn. of propene, isobutylene, or Me₃COH contains in its lower part multiple inlets for the starting gas and multiple inlets for O-containing gas arranged to face the inlets for the starting gas at a distance of 25-250 mm, the inlets being located 90-250 mm from each other with a d. of 16-120 inlets/m² of the cross-section of the reactor.

L10 ANSWER 39 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1991:409358 CAPLUS
 DOCUMENT NUMBER: 115:9358
 TITLE: Progress in acrylonitrile processes and its development policy
 AUTHOR(S): Hong, Zhangchuan
 CORPORATE SOURCE: Anqing Pet. Cent. Co., Peop. Rep. China
 SOURCE: Xiandai Huagong (1990), 10(4), 27-31
 CODEN: HTKUDJ; ISSN: 0253-4320
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: Chinese

AB A review with 6 refs. with emphasis on development of high-performance catalysts for ammoxidn. of propylene, modification of ammoxidn. reactor, and purification of acrylonitrile and its relative energy-saving measures.

L10 ANSWER 40 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1990:99469 CAPLUS
 DOCUMENT NUMBER: 112:99469
 TITLE: Production of α,β -olefinically unsaturated nitriles
 INVENTOR(S): Ramachandran, Ramakrishnan; Malik, Virginia A.; MacLean, Donald L.; Satchell, Donald P., Jr.
 PATENT ASSIGNEE(S): BOC Group, Inc., USA
 SOURCE: U.S., 14 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4870201	A	19890926	US 1988-281581	19881208
US 5008414	A	19910416	US 1989-410435	19890921
EP 372972	A1	19900613	EP 1989-312787	19891207
EP 372972	B1	19940202		
R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
ZA 8909381	A	19901031	ZA 1989-9381	19891207
AT 101122	T	19940215	AT 1989-312787	19891207
ES 2062042	T3	19941216	ES 1989-312787	19891207
JP 02223545	A	19900905	JP 1989-320411	19891208
JP 2731612	B2	19980325		
PRIORITY APPLN. INFO.:			US 1988-281581	A2 19881208
			US 1989-410435	A 19890921
			EP 1989-312787	A 19891207

AB High-efficiency and high-selectivity title process comprises (A) forming

an alkene from a gaseous alkane in a catalytic dehydrogenator; (B) introducing a stream of the resulting alkene, O or O-enriched gas, and NH₃ to an ammoxidn. reactor, and reacting in the vapor phase to produce a gaseous effluent containing the nitrile; (C) quenching in a liquid to form a nitrile-containing liquid phase and a gaseous phase; (D) recovering the nitrile; (E) introducing the gaseous phase in C to a pressure swing adsorption to form a gaseous stream comprising unreacted alkane and alkene, a minor amount of O and N; (F) removing the remaining O in the stream by passing through a catalytic selective oxidation unit; and (G) recycling the effluent to the dehydrogenator. The improvement comprises ≥ 2 parts of series-connected adsorptive beds in the pressure swing adsorption unit, wherein the 1st prior preferentially adsorbs alkane and alkene to other gases, therefore forming a gaseous stream containing them and a vent stream containing O, H, and N, which is introduced to the 2nd pair, thereby forming a stream of O and N, and H-enriched stream.

L10 ANSWER 41 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1988:424495 CAPLUS
DOCUMENT NUMBER: 109:24495
TITLE: Structure of active phases of cerium-containing multicomponent oxide and its catalytic behavior for ammoxidation of propylene
AUTHOR(S): Zheng, Yuzhen; Yang, Tianrong; Yu, Zuolong; Zhao, Jinglin; Cai, Hequan; Zhao, Qingyue
CORPORATE SOURCE: Changchun Inst. Appl. Chem., Acad. Sin., Changchun, Peop. Rep. China
SOURCE: Yingyong Huaxue (1988), 5(2), 13-17
CODEN: YIHUED; ISSN: 1000-0518
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The effect of Ce³⁺ on the catalytic behavior of multicomponent oxides consisting of PMo₁₂Bi₃Fe₈-xCe_xK_{0.10}y (I; x = 0-8) for ammoxidn. of propylene was studied in a fluidized-bed reactor. The structure of the catalyst was characterized by X-ray diffraction, IR, SEM, and thermogravimetry. The highest yield of acrylonitrile was obtained for I (x = 2-3) with Fe₂(MoO₄)₃, Ce₂(MoO₄)₃, and α -Bi₂O₃.3MoO₃ also being present in the catalyst. The dissoln. and coagulation of the 3 phases in the solid solution and the formation of pseudohomogeneous phase made the active component uniformly distributed at the surface and boundaries of the phases. The activity of the catalysts was caused by synergistic effect of the individual active components. Ce inhibited the sublimation of MoO₃ and stabilized the structure of the active phases.

L10 ANSWER 42 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1986:609554 CAPLUS
DOCUMENT NUMBER: 105:209554
TITLE: Unsaturated nitriles from alkanes
INVENTOR(S): Khoobiar, Sargis; Shapiro, Arnold J.
PATENT ASSIGNEE(S): Halcon SD Group, Inc., USA
SOURCE: Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 193310	A1	19860903	EP 1986-300992	19860213
R: BE, DE, FR, GB, IT, NL				

US 4609502	A	19860902	US 1985-701725	19850214
JP 61189256	A	19860822	JP 1985-225950	19851009
US 4754049	A	19880628	US 1986-830423	19860218
PRIORITY APPLN. INFO.:			US 1985-701725	A 19850214
OTHER SOURCE(S):	CASREACT 105:209554; MARPAT 105:209554			

AB Nitriles are prepared economically from the corresponding alkanes by (A) dehydrogenating the alkanes to olefins in the presence of steam and Group VIII metal catalysts to form an effluent stream comprising olefins, H₂O, carbon oxides, light hydrocarbons, and unreacted alkanes, (B) passing the mixture of the effluent stream, O₂, and NH₃ over an ammoxidn. catalyst to produce nitrile, (c) absorbing the nitrile to form an aqueous stream, (d) selectively oxidizing H from nitrile-depleted effluent over a catalyst, (e) separating carbon oxides and light hydrocarbons from the oxidized effluent, and (f) recycling the major part of the effluent containing alkane and olefin to the dehydrogenation reactor. Thus, 743 mol/h mixture of 14.9:7.1:0.7:9.2:6.9:0.8:36.4:23.9 (%) H₂O/CH₄/C₂H₆/CH₂:CHCH₃/H₂O/carbon oxides/C₃H₈ was heated at 60° in a selective oxidation reactor, separated into a purge stream and a recycled stream containing 95% C₃ compds., which was combined with 75.3 mol/h H₂O(g) to form 798.4 mol/h mixture containing 6.3% CH₂:CHCH₃, 34.6% C₃H₈, and no O₂, and fed to a dehydrogenation reactor at 600° and 0.7 bar over Pt and Ti on Zn aluminate to form a stream containing CH₂:CHCH₃ (35.7% yield based on C₃H₈). This stream was cooled and mixed with 214.8 mol/h O₂, and 100.2 mol/h NH₃ in ammoxidn. reactor at 405° over a catalyst to form H₂C:CHCN (65.7% yield based on CH₂:CHCH₃) which was absorbed and separated and the rest of the stream was recycled to the selective oxidation reactor.

L10 ANSWER 43 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1986:130295 CAPLUS
DOCUMENT NUMBER: 104:130295
TITLE: Adaptative control of a fluidized bed reactor
AUTHOR(S): Koutchoukali, M. S.; Laguerie, C.; Najim, K.
CORPORATE SOURCE: Inst. Gen. Chim., Toulouse, 31078, Fr.
SOURCE: IFAC Proceedings Series (1985), (4, Bridge Control Sci. Technol.), 1863-6
CODEN: IPSEET; ISSN: 0741-1146
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The production of acrylonitrile [107-13-1] in a steel fluidized-bed reactor was controlled by application of self-tuning proportional, integral, and derivative controller. A math. model was proposed based on material and energy balances which gave a set of coupled nonlinear partial differential equations.

L10 ANSWER 44 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1986:7686 CAPLUS
DOCUMENT NUMBER: 104:7686
TITLE: Application of Kunii's bubble bed model to an industrial fluid bed reactor
AUTHOR(S): Chowdhari, K. K.; Ponnani, K. N.
CORPORATE SOURCE: Res. Cent., Indian Petrochem. Corp. Ltd., Baroda, 391 346, India
SOURCE: Adv. Catal., [Proc. - Natl. Symp. Catal.], 7th (1985), 693-706. Editor(s): Prasada Rao, T. S. R. Wiley: New York.
CODEN: 54LUA4
DOCUMENT TYPE: Conference
LANGUAGE: English

AB C₃H₆ ammoxidn. to acrylonitrile in an industrial fluidized-bed reactor was analyzed on the basis of the Kunii bubble-bed model with modified estimation of the bubble diameter The bubble-diameter

variation with the bed height, the conversion dependence on the bubble diameter, and the fluidization-velocity dependence on the bubble diameter are presented graphically.

L10 ANSWER 45 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1986:497977 CAPLUS

DOCUMENT NUMBER: 105:97977

TITLE: Mass catalyst for the acrylonitrile process

AUTHOR(S): Aranda, Ericka Diaz

CORPORATE SOURCE: Mex.

SOURCE: Revista del Instituto Mexicano del Petroleo (1985),
17(2), 52-63

CODEN: RVMPAX; ISSN: 0538-1428

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

AB A heterogeneous catalyst containing Sb₂O₄, SnO₂, CuSb₂O₆ and Fe₂Sb₂O₇ (after thermal activation) enhanced propylene [115-07-1] conversion and minimized selectivity losses in acrylonitrile [107-13-1] production by ammoxidn. in a fixed-bed reactor. The preparation of the catalyst is described.

L10 ANSWER 46 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1984:513083 CAPLUS

DOCUMENT NUMBER: 101:113083

TITLE: A discrimination between some fluidized bed reactor models for ammoxidation of propylene to acrylonitrile

AUTHOR(S): Stergiou, L.; Laguerie, C.; Gilot, B.

CORPORATE SOURCE: Inst. Genie Chim., Ch  min Loge, Toulouse, 31078, Fr.

SOURCE: Chemical Engineering Science (1984), 39(4), 713-30

CODEN: CESCAC; ISSN: 0009-2509

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The predictions of 4 fluidized bed reactor models were compared with exptl. results obtained for the catalytic ammoxidn. of propylene. None of the models were acceptable for the prediction of conversion rates over the whole range tested. The bubble assemblage model of K. Kato and C. Y. Wen (1969) gave the best overall predictions when modified to include the wakes of the bubbles with their clouds or the bubble formation diameter is reduced.

L10 ANSWER 47 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1984:493532 CAPLUS

DOCUMENT NUMBER: 101:93532

TITLE: An experimental evaluation of fluidized-reactor models

AUTHOR(S): Stergiou, L.; Laguerie, C.

CORPORATE SOURCE: Inst. Genie Chim., Toulouse, 31078, Fr.

SOURCE: Proc. Int. Conf. Fluid., 4th (1984), Meeting Date
1983, 557-64. Editor(s): Kunii, Daizo; Cole, Sanford
S. Eng. Found.: New York, N. Y.

CODEN: 52CZAS

DOCUMENT TYPE: Conference

LANGUAGE: English

AB Four fluidized bed reactor models are compared for the catalytic ammoxidn. of propylene to acrylonitrile in a 165-mm-diameter reactor. The bubble assemblage model of K. Kato and C. Y. Wen (1969) provides the best overall predictions of conversion if it is suitably modified to include the wake with the bubble clouds.

L10 ANSWER 48 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 1984:50850 CAPLUS

DOCUMENT NUMBER: 100:50850

TITLE: Catalytic ammoxidation of propene in a differential reactor
 AUTHOR(S): Stergiou, L.; Gilot, B.; Laguerie, C.
 CORPORATE SOURCE: Inst. Genie Chim., Toulouse, 31078, Fr.
 SOURCE: Chemical Engineering Journal (Amsterdam, Netherlands) (1983), 26(3), 201-15
 CODEN: CMEJAJ; ISSN: 0300-9467

DOCUMENT TYPE: Journal
 LANGUAGE: French

AB The ammoxidn. kinetics of MeCH:CH₂ conversion to CH₂:CHCN over a Sn/Sb oxide catalyst is determined in a differential reactor at 490°. Factorial design of expts. leads to reliable rate equations over the range of partial pressures encountered in a fluidized bed reaction. The catalyst selectivity at this temperature is ≥82%. The addition of steam reduces the catalyst activity but increases its selectivity for CH₂:CHCN formation.

L10 ANSWER 49 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1982:149895 CAPLUS
 DOCUMENT NUMBER: 96:149895
 TITLE: Catalyst preparation technique
 INVENTOR(S): Miller, Arthur F.; Callahan, James L.; Shaw, Wilfrid G.
 PATENT ASSIGNEE(S): Standard Oil Co., USA
 SOURCE: U.S., 5 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4315838	A	19820216	US 1978-912651	19780605
PRIORITY APPLN. INFO.:			US 1978-912651	A 19780605

AB A method for forming particle or bead catalysts for fixed-bed reactors, especially for ammoxidn. and oxidation, with higher yields and selectivities than catalysts formed by conventional techniques consists of (1) forming a precatalyst containing all the catalytic metals and ≥1 thermally decomposable material, (2) optionally preheating to remove ≤90% of the decomposable material to form an aqueous slurry, (3) dropping slurry drops on a particle bed to form spherical agglomerates, and (4) calcining in O₂ to form the catalyst. Thus, an ammoxidn. catalyst 82.5% Co₄.5Ni₂.5Fe₃K₀.07BiP_{0.5}Mol₂O₅.3-17.5% SiO₂ was formed by adding (NH₄)₆Mo₇O₂₄.4H₂O 4016 g to 8907 g H₂O with stirring, adding H₃PO₄ 109 g and Aerosil SiO₂ soluble 555 g and stirring to a slurry, adding Co(NO₃)₃.6H₂O 2482.5 g and Ni(NO₃)₃.6H₂O 1378 g in 6325 g H₂O, adding Fe(NO₃)₃.9H₂O 2297 g in 422 g H₂O, adding Bi(NO₃)₃.5H₂O 919.5 g in 717 g H₂O and 91.2 g HNO₃, adding KNO₃ 171 g in 40 cm³ H₂O, adding Aerosil 555 g with stirring for 30-45 min, spray drying and heating to remove 70-75% of the nitrates, adding 105 g H₂O to 200 g of the denitrated powder and stirring to form a slurry, dropping the slurry onto a powder bed of the same composition, and heat treating to drive off the remaining nitrate.

L10 ANSWER 50 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1983:161300 CAPLUS
 DOCUMENT NUMBER: 98:161300
 TITLE: Apparatus for carrying out highly exothermic reactions
 INVENTOR(S): Wittkopf, Manfred; Pohl, Dietrich; Knaack, Karl Ernst; Kilian, Richard; Hebisch, Heinz; Mey, Frank; Marschner, Rolf; Vettorazzi, Karl Heinz; Dobberstein,

Lutz; Et, Al.
 PATENT ASSIGNEE(S): Ger. Dem. Rep.
 SOURCE: Ger. (East), 14 pp.
 CODEN: GEXXA8
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 157139	A3	19821020	DD 1977-199138	19770526
PRIORITY APPLN. INFO.:			DD 1977-199138	19770526

AB The title reactor, giving better material exchange and control of reaction heat and especially useful in the ammoxidn. of propylene [115-07-1], contains phase-exchange tubes made of mesh or expanded metal which break up gas bubbles in fluidized beds. Thus, passing 1:1:9.5 C₃H₆-NH₃-air through a catalytic reactor (length 1.5 m, diameter 80 mm) equipped with crosswise phase-exchange tubes 80 mm long and containing K_{0.07}Ni_{2.5}Co_{4.5}Fe₃BiMo₁₂P_{0.5}O_x catalyst (particle size 73% 40-90 μ) with contact time 10 s gave C₃H₆ conversion 96.5% and acrylonitrile [107-13-1] selectivity and yield 73.1 and 70.6%, resp., compared with 94.1, 68.8, and 64.8, resp., without the phase-exchange tubes.

L10 ANSWER 51 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1982:562317 CAPLUS

DOCUMENT NUMBER: 97:162317

TITLE: Experimental study on ammoxidation of propene to acrylonitrile in a laboratory-scale fluidized bed reactor

AUTHOR(S): Barbouteau, G.; Laguerie, C.; Cassimatis, D.; Chavarie, C.

CORPORATE SOURCE: Inst. Genie Chim., Toulouse, 31078, Fr.

SOURCE: Bulletin de la Societe Chimique de France (1982), (5-6, Pt. 1), I-202/I-210
 CODEN: BSCFAS; ISSN: 0037-8968

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Optimum conditions for ammoxidn. of propene to acrylonitrile in presence of Sn-Sb oxide catalyst were determined for a laboratory scale fluidized bed reactor. The maximum yield, 63%, was comparable to that obtained in a fixed bed reactor.

L10 ANSWER 52 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1981:3737 CAPLUS

DOCUMENT NUMBER: 94:3737

TITLE: Experimental comparison of the catalytic ammoxidation of propene to acrylonitrile on a fixed bed and on a fluidized bed

AUTHOR(S): Barbouteau, G.; Laguerie, C.; Angelino, H.

CORPORATE SOURCE: Inst. Genie Chim., Toulouse, 31078, Fr.

SOURCE: Chemical Engineering Journal (Amsterdam, Netherlands) (1980), 20(1), 43-57

CODEN: CMEJAJ; ISSN: 0300-9467

DOCUMENT TYPE: Journal

LANGUAGE: French

AB The ammoxidn. of propene over Sb-Sn-Fe-Cu catalyst in a 50 mm diameter fluidized bed reactor was comparable to the same process in a 25 mm diameter fixed bed reactor. The results were inferior in a 25 mm diameter fluidized bed reactor.

L10 ANSWER 53 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1979:459321 CAPLUS
DOCUMENT NUMBER: 91:59321
TITLE: Reactor for contacting gases and a particulate solid
INVENTOR(S): Callahan, James L.; Hardman, Harley F.; Milberger, Ernest C.
PATENT ASSIGNEE(S): Standard Oil Co., USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4152393	A	19790501	US 1977-758607	19770112
US 4341717	A	19820727	US 1978-967557	19781208
PRIORITY APPLN. INFO.:			US 1973-339082	A1 19730308
			US 1977-758607	A3 19770112

AB The reactor has a cylindrical shell and 3 concentric walls that form a central, cylindrical chamber and 3 annular chambers. The 1st and 3rd concentric walls are connected together around the lower end. The 2nd concentric wall extends downward from the cover into the space between the 1st and 3rd walls, but not to the bottom. Regeneration air is fed into the bottom zone of the central chamber and reactants are bed into the bottom zone of the chamber between the 1st and 3rd walls. The solids move upwardly in the central chamber and overflow into the adjacent annular chamber where they move downwardly and under the 2nd wall into the reaction chamber. The solids move upwardly in the reaction chamber and overflow into the outer chamber where they move downwardly to the reaction bottom and then horizontally into the bottom zone of the neutral chamber. The gases from the regeneration and reaction are discharged through cyclones and lines through the cover. The operation was exemplified on C₃H₆ ammoxidn. by NH₃ and an oxidant consisting of K_{0.1}Ni_{2.5}Co_{4.5}Fe₃BiP_{0.5}Mo₁₂Ox 50 and SiO₂ 50% (particle size 74-177 μ). The C₃H₆ conversion was 89.0%, the selectivity to H₂C:CHCN 64.4%, and the conversion/pass to H₂C:CHCN 57.3%.

L10 ANSWER 54 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1980:59410 CAPLUS
DOCUMENT NUMBER: 92:59410
TITLE: Recovery and purification of olefinic nitriles
INVENTOR(S): Wu, Hsin C.
PATENT ASSIGNEE(S): Standard Oil Co., USA
SOURCE: Can., 17 pp.
CODEN: CAXXA4
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 1063621	A1	19791002	CA 1975-239076	19751105
PRIORITY APPLN. INFO.:			CA 1975-239076	A 19751105

AB Recovery of acrylonitrile (I) [107-13-1] and methacrylonitrile (II) [126-98-7] produced by ammoxidn. of propylene [115-07-1] or isobutylene [115-11-7] is improved if at least part of the product distillation column bottoms is recycled to form at least part of the quench liquid in the quenching step of a recovery system in which the ammoxidn.

reactor effluent is contacted with quench liquid to produce a gaseous effluent at 90-230°F, the gaseous effluent is absorbed in H₂O, crude I or II is separated from impurities and most of the H₂O, and the crude product is distilled to obtain a gaseous overhead stream of pure I or II and a column bottoms stream. This process improvement also eliminates the addnl. distillation step normally required for further recovery of I or II from the bottoms stream. A flow sheet diagram is included.

L10 ANSWER 55 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1978:191767 CAPLUS
 DOCUMENT NUMBER: 88:191767
 TITLE: Process for recovery and purification of olefinic nitriles
 INVENTOR(S): Wu, Hsin Chih
 PATENT ASSIGNEE(S): Standard Oil Co., USA
 SOURCE: Brit., 6 pp.
 CODEN: BRXXAA
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1492128	A	19771116	GB 1975-47031	19751114
PRIORITY APPLN. INFO.:			GB 1975-47031	A 19751114

AB An improved process is described for the recovery and purification of acrylonitrile (I) from the ammoxidn. of propylene by using the product column bottoms as the quench liquid. Thus, effluent from an ammoxidn. reactor was cooled to 450°F and passed to the top of a gas washer and was contacted with a recycling aqueous liquid spray at 180°F. High-boiling material collected at the bottom of the washer and volatile materials were passed through a bubble chamber containing H₂SO₄ at 180°F into a water-spray absorber. Water-soluble material was removed from the bottom of the absorber and passed into a recovery column from which volatile material was transferred to a HCN column and the bottoms was passed to a stripper to remove acetonitrile. The bottoms was used as the liquid spray for the gas washer for the ammoxidn. reactor effluent. I was recovered from the bottom of the HCN column and was distilled to remove water and I loss was 1.1% compared with 2.5% for prior art methods.

L10 ANSWER 56 OF 61 COMPENDEX COPYRIGHT 2007 EEI on STN

ACCESSION NUMBER: 1977(9):1305 COMPENDEX
 DOCUMENT NUMBER: 770967098
 TITLE: NEWEST ACRYLONITRILE PROCESS.
 AUTHOR: Pujado, P.R. (UOP Inc, Des Plaines, Ill); Vora, B.V.; Krueding, A.P.
 SOURCE: Hydrocarbon Process v 56 n 5 May 1977 p 169-172
 SOURCE: Hydrocarbon Process v 56 n 5 May 1977 p 169-172
 CODEN: HYPRAX
 PUBLICATION YEAR: 1977
 LANGUAGE: English

AN 1977(9):1305 COMPENDEX DN 770967098

AB A brief review of three methods of acrylonitrile synthesis is followed by a description of several modern commercial acrylonitrile processes based on propylene ammoxidation (oxidative amination). These processes are similar and can produce high purity product but each has its own characteristics of reaction techniques, catalyst, product recovery and purification. The ammoxidation catalyst and the reactor are the heart of the process. Some of the older ammoxidation processes used multi-tubular fixed-bed

reactors but all major modern acrylonitrile processes today use fluidized bed reactors. These reactors give much better temperature control and remove the limitations of propylene and ammonia concentration due to explosibility of the feed mixture in a fixed bed reactor. Details are given of the Montedison-UOP process which seems to be an attractive alternative to other existing technologies. The process is now operated in full-size commercial plants.

L10 ANSWER 57 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1975:532261 CAPLUS
DOCUMENT NUMBER: 83:132261
TITLE: Acrylonitrile and methacrylonitrile recovery and purification system
INVENTOR(S): Wu, Hsin Chih
PATENT ASSIGNEE(S): Standard Oil Co., USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3885928	A	19750527	US 1973-371043	19730618
PRIORITY APPLN. INFO.:			US 1973-371043	A 19730618

AB The aqueous layer from the decanter used to sep. acrylonitrile [107-13-1] or methacrylonitrile [126-98-7] from the sidestream from the HCN distillation column which contained an acid stabilizer was recycled to the quenching column to reduce the amount of acid necessary to neutralize the excess NH₃ coming from the ammoxidn. reactor. The ammoxidn. reactor effluent was quenched in a column with an aqueous medium to cool the hot gases, fed to an absorption column to concentrate the nitrile-HCN mixture, fed to a distillation column where HCN was removed, and ACOH was added to stabilize the system. A side or bottom stream from the distillation column was fed to a decanter where the organic layer was removed for further purification and the aqueous layer was recycled to the quenching column.

L10 ANSWER 58 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1976:422078 CAPLUS
DOCUMENT NUMBER: 85:22078
TITLE: Apparatus for acrylonitrile manufacture
INVENTOR(S): Tanaka, Tetsuo; Nogami, Akira
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Tokyo Koho, 4 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50015772	B	19750607	JP 1971-36284	19710528
PRIORITY APPLN. INFO.:			JP 1971-36284	A 19710528

AB Acrylonitrile (I) [107-13-1] was obtained in improved yield by ammoxidn. of propylene [115-07-1] in the presence of P-Mo-Bi/SiO₂ catalyst by placing straight or U-shaped, vertical baffle pipes between cooling coil and air feeder in reactor; the baffle pipes occupied 5-40% of the reactor cross-sectional area. For example, in a 2.7 m-diameter reactor

filled with the catalyst to 3 m height (at rest) and containing U-shaped baffle pipes occupying 25% of the reactor cross-sectional area, the ammoxidn. of 500 m³/hr propylene with 5300 m³/hr air and 650 m³/hr NH₃ at 400°/1 kg/cm² gave products composed of I 63.5, MeCN 6.8, HCN 8.5, CO₂ 9.8, CO 7.4, and unreacted propylene 4.0, compared with 59, 7.0, 85, 10, 7.5, and 8.0, resp., for products obtained without the baffle pipes.

L10 ANSWER 59 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1975:72488 CAPLUS

DOCUMENT NUMBER: 82:72488

TITLE: Application of fluidized bed technology to petrochemical reactions

AUTHOR(S): Holve, Wilbur A.; Sheely, H. Russell; Schaffert, Frederick W., Jr.

CORPORATE SOURCE: Badger Co., Inc., Cambridge, MA, USA

SOURCE: Quaderni dell'Ingegneria Chimica Italiano (1974), 10(6), 112-14

CODEN: QICIAU; ISSN: 0370-288X

DOCUMENT TYPE: Journal

LANGUAGE: Italian

AB The main characteristics of the fluidized bed reactor and of some of its industrial applications are briefly described. In particular, outlines of the following processes are reported: the oxidation of naphthalene to phthalic anhydride, the ammoxidn. of propylene to acrylonitrile, and the oxychlorination of ethylene to dichloroethane.

L10 ANSWER 60 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1970:54485 CAPLUS

DOCUMENT NUMBER: 72:54485

TITLE: Kinetics of the ammoxidation of propylene over a bismuth-molybdate catalyst

AUTHOR(S): Shelstad, K. A.; Chong, T. C.

CORPORATE SOURCE: Fac. Eng. Sci., Univ. Western Ontario, London, ON, Can.

SOURCE: Canadian Journal of Chemical Engineering (1969), 47(6), 597-602

CODEN: CJCEA7; ISSN: 0008-4034

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Integral conversion data for the ammoxidation of propylene were obtained using a flow reactor and 10.0 g of a bismuth-molybdate catalyst. Anal. by gas chromatog. for C-containing compds. in the product gases showed the presence of unreacted propylene, acrolein, acrylonitrile, CO₂ and small amts. MeCN. The data at 390° were correlated on the basis of a simplified scheme of first-order reactions with acrolein as an intermediate. The results at higher temps. and with reduced amts. of O in the feed indicated that both the activity and selectivity of the catalyst were affected by the O content of the catalyst.

L10 ANSWER 61 OF 61 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1970:42712 CAPLUS

DOCUMENT NUMBER: 72:42712

TITLE: Course of propene ammoxidation in a large laboratory reactor

AUTHOR(S): Wasilewski, Jerzy; Beres, Janusz; Spadlo, Marian

CORPORATE SOURCE: Inst. Cieskiej Syn. Org., Blachownia Slaska, Pol.

SOURCE: Przemysl Chemiczny (1969), 48(8-9), 523-7

CODEN: PRCHAB; ISSN: 0033-2496

DOCUMENT TYPE: Journal

LANGUAGE: Polish

AB Bi-Mo catalyst on α -Al₂O₃ carrier was used. The laboratory reactor, 25 mm

in diameter and one m operating length, had 8 sample outlets. Expts. were run at 490° and a mixture of 1:1:1.9:6.2 (molar ratio) C₃H₆-N₂-O₂-H₂O was fed at 1.97 moles C₃H₆/dm³/hr; 78.5% propene was converted to yield acrylonitrile 62.1, acetonitrile 8.7, HCN 7.0, and a mixture of CO and CO₂ 21.1%; selectivity of oxidation 79%; unit yield 65 g/dm/hr. From the exptl. results, math. relations, which could serve as a basis for a math. model for a tubular reactor as well as to verify the kinetics of formation of acrylonitrile, acetonitrile, HCN, and oxides of carbon, were formulated.

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	425	ammoxidation same reactor same acrylonitrile	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN T; IBM_TD B
2	BRS	L2	232	ammoxidation with reactor with acrylonitrile	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN T; IBM_TD B
3	BRS	L3	8	2 and spectrometer	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN T; IBM_TD B

	Type	L #	Hits	Search Text	DBs
4	BRS	L4	8	2 and (spectrometer or spectrophotometer)	US- PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWEN T; IBM_TD B
5	BRS	L5	4	("6284196").URPN.	USPAT
6	BRS	L6	1137	fourier near6 transform near6 infrared near6 (spectrometer or spectrophotometer)	USPAT
7	BRS	L7	2	reactor near8 effluent with fourier near6 transform near6 infrared near6 (spectrometer or spectrophotometer)	USPAT
8	BRS	L8	2	6 and ammodxidation	USPAT
9	BRS	L9	9	reactor with fourier near6 transform near6 infrared near6 (spectrometer or spectrophotometer)	USPAT
10	BRS	L10	3	reactor near8 effluent same fourier near6 transform near6 infrared near6 (spectrometer or spectrophotometer)	USPAT
11	BRS	L11	25	reactor same fourier near6 transform near6 infrared near6 (spectrometer or spectrophotometer)	USPAT